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Abstract

This final report of the Pennsylvania Research Coordinating Unit for Vocational Education (RCU) summarizes activities during the period from August 1966 to August 31, 1969. Major activities and accomplishments of the RCU include program initiation, development of research and related activities, ancillary research and related projects, the Pennsylvania Vocational Education Study, and conferences and meetings. Dissemination activities were accomplished through the RCU Reporter, and "Pennsylvania Abstracts of Research and Related Materials." Also included is information about publications and papers presented by staff members and consulting services, staff summary, and future activities. (CH)

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FINAL REPORT

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THE ESTABLISHMENT OF A STATE RESEARCH COORDINATING UNIT IN VOCATIONAL EDUCATION IN PENNSYLVANIA

SEPTEMBER, 1969

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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DR. JAY SMINK, DIRECTOR
DR. FERMAN MOODY, ASSISTANT DIRECTOR

SEPTEMBER, 1969

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U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
OFFICE OF EDUCATION
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I. INTRODUCTION

The Pennsylvania Research Coordinating Unit for Vocational Education (RCU) was established in August 1966, as an integral part of the State Department of Education (formerly the Department of Public Instruction). Funded under provisions of Section 4c of the Vocational Education Act of 1963 (Grant Number OEG-1-6-062470-2234), the unit became one of four divisions within the Bureau of Research. The other divisions were: (1) Division of Research Design, (2) Division of Cooperative Research Studies, and (3) Division of Applied Educational Research. The RCU was administratively responsible to the Director of Research and the State Director of Vocational Education. The unit performed research services for the entire staff of the Bureau of Vocational, Technical and Continuing Education. This administrative arrangement was advantageous in that the special competencies of research personnel and the expertise of vocational specialists were readily available to the RCU when needed. The organizational structure also allowed the RCU to communicate effectively and to maintain an excellent working relationship with personnel in both bureaus.

The general objectives of the RCU were to:

1. stimulate and encourage occupational education research and development activities in Pennsylvania,

2. coordinate occupational education research conducted within Pennsylvania,

3. disseminate information on progress and results of occupational education research, and

4. plan and conduct needed occupational education research when other agencies were reluctant to do so.

The purpose of this final report is to present an overview and brief description of the major activities of the RCU from its inception in August 1966, to the termination of the grant period on August 31, 1969. Because of a limitation of space, the major activities and accomplishments section only highlights the most notable events. A broad indication of the objectives and activities which should guide the operations of the unit in the future as it contributes to the extension and improvement of vocational education in Pennsylvania is also included.

II. MAJOR ACTIVITIES AND ACCOMPLISHMENTS

Program Initiation

A major activity of the RCU during its initial stage of operations was to develop research programs including strategies and procedures necessary to extend and improve vocational education in Pennsylvania in light of its previously stated objectives. The selection of an RCU staff to establish role functions, duties and responsibilities was one of the first tasks. The selection of staff was a slow process. However, as staff became available they immediately began to determine and communicate its role with local, State and national personnel from various agencies with whom it would coordinate activities.

Continuous efforts were made to facilitate RCU functions by holding conferences and in-service training sessions with interested individuals and groups. Attending staff meetings and State-wide gatherings provided excellent opportunities to meet the vocational educators and learn of their research needs. Concentrated efforts were focused upon individual conferences with State and university officials including visits to other RCU's in neighboring states with a view toward exchanging ideas and arranging for future communication and cooperation. This continuous communication proved to be extremely helpful in establishing the unit and introducing the RCU as a change agent in vocational education in the Commonwealth.

The formulation of an RCU Advisory Committee was extremely advantageous in determining the role of the RCU. The purpose of the advisory committee was to give guidance and direction to the RCU staff and activities. A twelve-member advisory committee was selected having representation from the five major areas of vocational education, and the Bureau of Employment Security, Public Schools, Teacher Education Institutions, Manpower Programs, and Labor and Industry. Several of the original members remain active on the committee. However, because of death, retirement, job changes, etc., several new appointments have been made:

Members of the advisory committee were:

Mr. Richard Carter
Regional Director
Sears-Roebuck Foundation

Dr. Hugh Davison
Professor of Education
and Research
The Pennsylvania State University

Mr. Michael Johnson
Executive Vice-President
Pennsylvania AFL/CIO

Mr. Chester S. Nagel
Bureau of Employment Security
Dept. of Labor and Industry

Dr. A. Carolyn Newsom, Chairman
Dept. of Home Economic Education
School of Home Economics
Indiana University of Penna.

Mr. Robert A. Ranberg
Sr. Research Analyst
Pennsylvania Economy League

Dr. H. H. Singer, Director
of Vocational Teacher Ed.
Temple University

Mr. Robert Buzbee
Eastern Representative
Sears-Roebuck Foundation

Dr. William Kelly, Director
J. F. Kennedy Training Center
The School District of
Philadelphia

Dr. David R. McClay, Dept. Head
Agricultural Education
The Pennsylvania State University

Mr. J. Thomas Weyant
Assistant Executive Director
Pennsylvania Retailer's
Association

Dr. S. Lloyd Toumey, Director
Division of Business Education
Bloomsburg State College

Dr. George Brandon, Director
Vocational Teacher Education
The Pennsylvania State University

Dr. Louis J. Kishkunas, Superintendent
Pittsburgh City School District

Mr. William T. Schmidt, Executive Deputy
Secretary of Commerce
Department of Commerce

Mr. Edward S. Hochstetter, Director
State and Federal Economic Aid

Mr. Robert S. Lewis, Assistant Director
Pennsylvania Economy League

Development of Research and Related Activities

During the initial phases of the development of the RCU, emphasis was placed upon analyzing the occupational education research goals, needs and priorities in the State. This analysis gave the RCU a strong basis upon which to plan and develop research strategies. It was concluded that the unit could fulfill its objectives best by providing a "consulting service" to local schools and other agencies who were interested in conducting needed occupational education research. This activity involved developing and disseminating guidelines for proposal preparation, giving on-site assistance to individuals and agencies with specific problems involving research design and other procedures, and bridging the research communication gap between agencies and institutions and the Bureau of Vocational, Technical and Continuing Education.

From an analysis of the occupational education research situation in Pennsylvania, the RCU found that there existed in the Commonwealth a strong reluctance on the part of <u>local</u> vocational educators to conduct needed research. Behind this reluctancy was the attitude that research was very difficult to conduct and that major responsibility for research should be left to the so-called "research experts" in colleges and universities. This situation created a need for the RCU to devote attention to activities designed to stimulate and encourage the development of occupational education research at the local level. The first step in resolving this situation involved the development of an introductory brochure describing the purpose, objectives, activities and organization of the RCU. Over 5,000 brochures were printed and disseminated to appropriate vocational-technical personnel in the Commonwealth.

A series of one day in-service workshops were planned and conducted for local vocational educators, directors and teachers in the Commonwealth. The workshops were called PROJECT , an acronym representing the purpose of the workshops; Providing Researchers On the Job with Evaluation Criteria and Techniques. Special attention was directed to preparing prospective researchers in the art of proposal writing and overall research procedures. The presentations covered (1) research methods and procedures, (2) statistics, (3) educational objectives, (4) evaluation in vocational education, (5) dissemination (with emphasis on VT-ERIC), (6) funding sources and (7) the art of proposal writing. In many instances, certain topics included in the workshops were presented separately to vocational educators during conferences and meetings or as a part of in-service workshops in local school districts. These activities have caused vocational educators to show more interest in the usefulness and importance of research. Research proposals submitted to the RCU following the workshops tended to be better prepared in terms of acceptable research standards than those in previous years.

Ancillary Research and Related Projects

A total of 166 ancillary research and related projects were approved, funded and conducted during the past four years*. These projects were conducted by local school districts, county offices, colleges and universities. Table I depicts the federal, state and local expenditures for vocational educators with an indication of the percentage of the total budget spent for ancillary research and related projects.

There were four general types of research and related projects funded with ancillary monies. The first was experimental research, which employed a rigid design and made use of inferential statistics. The second was the developmental project, divided into two subcategories. The initial subcategory was curriculum development, which made use of descriptive statistics and observations including evaluation. The second subcategory was the development of innovative instructional methods. The third general type of project was the pilot study and the fourth was the workshop or teacher training activity. The percentage breakdown of projects as to type is shown in Table II.

Ancillary projects were also classified under the several occupational education services. Projects which spanned all seven of the services were classified under the "All Fields" heading. The percentage breakdown of projects in the occupational education vocational services is shown in Table III.

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*Twenty-nine of these projects were funded initially in 1965-66. Most of the projects were of a three year duration with year to year funding. Thus, the RCU played a significant role in almost all of the projects.

TABLE I

EXPENDITURES FOR ANCILLARY SERVICES AND
VOCATIONAL EDUCATION IN PENNSYLVANIA
FROM 1965 THROUGH 1968

Year	Funding Source	Expenditures		Percent Expended for Ancillary Services
		Vocational Education	Ancillary Services	
1965	Federal	$ 8,866,678	$ 292,052	-
	State	8,547,683	385,862	-
	Local	14,372,701	88,215	-
	TOTAL	$ 31,787,062	$ 766,129	2.4%
1966	Federal	$ 12,568,131	$ 1,765,097	-
	State	7,119,942	906,343	-
	Local	20,640,941	1,540,843	-
	TOTAL	$ 40,329,014	4,212,283	10.4%
1967	Federal	$ 13,804,197	$ 2,052,467	-
	State	29,771,960	804,490	-
	Local	30,247,210	2,547,710	-
	TOTAL	$ 73,823,367	$ 5,404,667	7.3%
1968	Federal	$ 14,492,236	$ 2,676,455	-
	State	31,567,863	1,408,350	-
	Local	48,768,015	1,891,569	-
	TOTAL	$ 94,828,114	$ 5,976,374	6.3%
	GRAND TOTAL	$240,767,557	$16,359,453	6.5%

TABLE II

TYPE OF RESEARCH PROJECTS FUNDED, 1965-1969

	Percent	Number of Projects
Experimental	3%	4
Developmental (Descriptive Evaluative)	18%	21
Developmental (Instructional Methods)	47%	54
Pilot	11%	13
Workshops	21%	24
TOTALS	100%	116

TABLE III

RESEARCH PROJECTS BY VOCATIONAL SERVICE, 1965-1969

	Percent
Agriculture	12%
Business	18%
Distributive Education	9%
Guidance	7%
Health	5%
Home Economics	16%
Trade and Industry	14%
All Fields	19%

Almost one-half of the projects were conducted in the development of instructional methods. Workshops, pilot programs and curriculum development projects were fairly evenly distributed. The experimental projects comprised only three percent of all projects. Table III indicates that 19 percent of the projects spanned all occupational fields. Business, home economics, trade

and industry, and agriculture, in that order, were evenly distributed. Distributive education, guidance and health projects were all less than ten percent of the total.

A brief description of all projects funded from 1965 to 1969 is given in Appendix A.

Procedures for Conducting Research

The RCU staff developed a monitoring procedure manual to coordinate these research and related projects. The procedure manual included step-by-step details of each action taken by the local researcher, the Bureau of Vocational, Technical and Continuing Education and the Research Coordinating Unit project officer from the initiation of the prospectus to submitting the final report. A form for evaluating proposals and a form to distillate field readers opinions were included.

In the summer of 1969, the Research Coordinating Unit developed and disseminated 700 copies of a brochure outlining guidelines for conducting research. The brochure outlined the provisions of P. L. 90-576 as applied to research. Vocational education research was defined, research policies were set forth and eligible agencies identified.

Detailed procedures were given to aid the potential researchers in applying for funds.

The Pennsylvania Vocational Education Study

The most significant long term accomplishment of the RCU was the planning and conduct of a comprehensive study of vocational education in Pennsylvania.

In 1966, Mr. Gail Rose, Chairman of the Vocational Education Committee of the State Board for Vocational Education, requested the Bureau of Vocational, Technical and Continuing Education and the Research Coordinating Unit to develop a proposal for a comprehensive study of vocational and technical education in Pennsylvania which would appraise the present program and determine the direction for programs in the immediate future.

As a result of consultation between the two staffs and with the advice of the State Advisory Committee for Vocational Education, and the RCU Advisory Committee, twelve broad areas of concern in vocational education were identified for possible study. Proposals pertinent to these topics were solicited from consulting firms. Four firms responded with proposals which were presented in June 1967, to a review committee of State Board, Department of Education staff members and two vocational education research consultants.

After review and discussion of the presentations and the proposals, it was the consensus of the committee not to enter into a contract with any of the consulting agencies for the whole study. The committee suggested that such a comprehensive study should be completed by the present staff and directed by a consultant who was knowledgeable about vocational and technical education.

As a result, in August 1967, the Pennsylvania Department of Education entered into a contract with Dr. Walter M. Arnold, former Assistant Commissioner for Vocational and Technical Education, U. S. Office of Education, who had been granted a leave of absence to perform certain consulting services.

An outline of a proposed study, prepared by Dr. Arnold with the assistance of the RCU and other department staff members, was presented to and approved by the State Board for Vocational Education in its regular meeting in September 1967.

During the course of the study, sub-contracts were entered into, the results of which were very useful in producing the final report. In addition, the director and the staff of the RCU contributed materially by assuming the responsibility for the planning and conduct of certain special studies. Both clerical and professional assistance provided by the Bureau of Vocational, Technical and Continuing Education also contributed materially to the completion of the study.

The study was planned primarily as a pragmatic overview and analysis of vocational, technical and continuing education program in the Commonwealth over the past five years, 1964 through 1968, to determine its achievements, deficiencies and direction in the light of priority needs of the people and employers. The guidelines for the study were based on the thirteen goals for vocational and technical education approved by the State Board of Education in March 1966.

The study was addressed to an analysis of the operating program since the passage of the Vocational Education Act of 1963, to determine what its direction was in the light of the economic trends and manpower needs of the State and what the projected program needs and costs might be up to 1975. There was a minimum of philosophical treatment of vocational education; the emphasis was on <u>systematic planning</u> for a total, unified manpower development program for the future. The emphasis was placed on "what is needed" and "how can it be accomplished", rather than "why should it be done".

Since this was the first such large scale attempt made in the State, there were undoubtedly some deficiencies in the study. In a number of instances, sub-studies had to be sharply delimited because of the lack of time and the urgent need for results to be synchronized with the implementation of the Vocational Education Amendments of 1968, P. L. 90-576. Certain methods of projecting economic trends, manpower demands and needs, and program costs were chosen as against other methods which might be just as appropriate and reliable. It is very important, therefore, that the study of the manpower de-

velopment programs in Pennsylvania be continued, making necessary adjustments and revisions, by the Research Coordinating Unit with the active cooperation and assistance of the Bureau of Research, the Bureau of Vocational, Technical and Continuing Education and other involved State and Federal agencies.

With the preceding as a background, the following paragraphs describe the nature and pattern of the final report entitled "Vocational, Technical and Continuing Education in Pennsylvania--A Systems Approach to State-Local Program Planning". Section I is devoted to a five-year analysis of enrollments and expenditures in vocational-technical and continuing education, 1964, the first fiscal year of the Vocational Education Act of 1963 (without funding) through the fiscal year 1968, the last fully reported program year. Included in the analysis is a general appraisal of the current program and its direction in the light of existing and projected labor force needs in Pennsylvania. It was not possible in this undertaking to make a thorough, in-depth evaluation of the quality of instruction in the existing program. This should become readily possible in the immediate years ahead.

In Section II, economic and projected trends of the Pennsylvania economy were analyzed and described. This analysis is not intended as a fine treatment for professional economists, but rather as a study of the important relevant economic information and trends for vocational, technical and adult education planning purposes. By those means, it is expected that vocational education could be more purposefully planned so that training programs might become attuned to the continued improvement of the economy in their communities and in the State as a whole. Another purpose of the economic analysis was to involve educators and vocational educators more directly in the business and industrial development of their communities and the State. In the future, program plans prepared and submitted by vocational educators could be measured more carefully and thoroughly in terms of an improved social and economic environment. In this way vocational, technical and continuing education could in fact become an economic asset to the Commonwealth.

Section II also identifies and describes briefly nine principal occupational training agencies and programs. The output of their graduates in 1967 became an important part of projecting the unmet occupational training needs by 164 classifications, State-wide and for each of the 67 counties in the State. Therefore, Section II furnishes the basis for program planning and implementation dealt with in Section III.

Section III, along with Section II, forms the keystone to the whole study and report. A systems approach to vocational and technical education program planning is explained and described in detail in Chapter VI. Five charts and five forms were designed and applied in part in a local situation, the Cumberland-Perry Counties area, to illustrate this approach. The idea here was not to "sell" the systems approach as such, but rather to provide a sound method for making decisions in the final selection of programs from various feasible alternatives. Chapter VII sets up recommendations for a State organization and administration that would be needed to

implement the systematic planning procedures as well as the other important functions of the State program.

Section IV identified the principal difficulties in reporting procedures and provides recommendations for improving these administrative activities. Also revealed were some of the weaknesses in the present financial aid policies, especially in the light of the new policies required under P. L. 90-576. Certain recommendations suggest revision of legislation and the need for a formula for determining allocations of funds to local districts in the future.

Section V gave an overview of ancillary services and activities over the past five years. This section was devoted primarily to reports of two major ancillary services of the utmost importance in the growing vocational education programs, teacher education and certification, and vocational guidance services. Both of these services, along with research activities and curriculum development, are fundamental to the ultimate success of the program.

Section VI was devoted to an account of five special studies that were conducted, namely, the two large cities, Philadelphia and Pittsburgh; special socioeconomic needs; a follow-up system of graduates; and employer survey; and a survey of local vocational education administrators. All of these special studies contributed to a well-rounded report and strongly based conclusions and recommendations.

Perhaps the most important single concept threading throughout the report is that of a State-wide unified program of occupational and continuing education coordinated by the Pennsylvania State Board for Vocational Education.

The report will be valuable in affecting program changes and improvements in proportion to the extent of the implementation of, at least, the more basic overall recommendations such as systematic program planning, follow-up of vocational education graduates and early leavers and reorganization of the Bureau of Vocational, Technical and Continuing Education.

Conferences and Meetings

In order to be more effective and to provide appropriate leadership at the State level, the RCU staff attempted to improve its competencies and fulfill its objectives by attending and participating in workshops, institutes and conferences. Participation in these conferences has greatly facilitated the working relationships with both State and national leaders in vocational education. An overview of the more significant workshops, meetings and conferences, participated in or attended by one or more of the RCU staff during the three-year period is listed on the following pages.

NATIONAL CONFERENCES AND MEETINGS

DESCRIPTION	LOCATION
Program Evaluation Review Technique (PERT) Workshops	Ohio State University Columbus, Ohio
National Workshop on Vocational Education for Personnel with Special Needs	Washington, D. C.
Annual Conventions of the American Association of School Administration	Atlantic City, New Jersey
Annual Meetings of the American Educational Research Association	No permanent location
Educational Data Systems Meeting	Washington, D. C.
Vocational-Technical Education Public Information Institute	Georgia State College Atlanta, Georgia
Educational Resource Information Center Workshop	Ohio State University Columbus, Ohio
Annual Conferences of the Pennsylvania Educational Research Association	No permanent location
American Vocational Association Annual Meetings	No permanent location
ESEA Title V Workshop in Educational Research	University of Wisconsin Madison, Wisconsin
Northeastern States RCU Annual Conferences	No permanent location
National RCU Directors Conferences	No permanent location
National Conference on Evaluating Vocational Education	Atlantic City, New Jersey
ESEA Title V Workshop in Educational Research	University of Denver Denver, Colorado
National Vocational Teacher Education Seminar	Chicago, Illinois
AERA Post-session on Survey Research	University of Maryland College Park, Maryland

National Conference on Vocational Education Research	Oklahoma City, Oklahoma
Annual Conference of the American Personnel and Guidance Association	Las Vegas, Nevada
Summer Institute on Improving Vocational Education Evaluation	University of Arkansas Fayetteville, Arkansas
Research Training Conference on Evaluation of Vocational and Technical Education Programs Effectiveness	University of California Los Angeles, California

STATE CONFERENCES AND MEETINGS

DESCRIPTION	LOCATION
General Electric Systems Engineering Management Workshops	Valley Forge, Pennsylvania
Conference on Cost Benefit Analysis in Vocational Education	The Pennsylvania State University University Park, Pennsylvania
Annual Conference of the Department of Vocational Practical Arts in Pennsylvania	Tamiment, Pennsylvania
Institute on Evaluation and Techniques of Experimental Research	University of Pennsylvania Philadelphia, Pennsylvania
Annual Conference of the Pennsylvania Educational Congress Department of Education	Harrisburg, Pennsylvania
Annual Meeting of the Pennsylvania School Study Council	The Pennsylvania State University University Park, Pennsylvania
Fortran IV Computer Workshop	Harrisburg, Pennsylvania
Technical Manpower Conference	The Pennsylvania State University University Park, Pennsylvania
Educational Data Processing Workshop	Harrisburg, Pennsylvania
Pennsylvania School Counselors Association Annual Conference	Hershey, Pennsylvania

RCA Computer Seminar	Shippensburg State College Shippensburg, Pennsylvania
Industrial Arts Convention	Lancaster, Pennsylvania

Northeastern States RCU Conference - 1969

The Pennsylvania RCU served as host to the Annual Northeastern States RCU Conference in May, 1969. The conference was planned by the Pennsylvania RCU in cooperation with other RCU's in the Northeastern States, USOE, information specialists and other vocational educators.

The central theme of the conference was the problem of communication and unified efforts. A number of topics related to the central theme were presented during the conference.

Another concern of the conference was the establishment of priorities for research and developing guidelines for evaluating proposals.

One of the most significant outcomes of the meeting was the interest shown in the proposed study dealing with the preparation of trade and industrial educators in the Northeast presented by Dr. Leon Tunkel, Vocational Teacher Educator from New York. Several states expressed an interest in developing this proposal. The proposal was developed and submitted to the Office of Education for funding.

III. DISSEMINATION ACTIVITIES

The RCU Newsletter - The major dissemination activity of the RCU was the initiation and publication of The RCU Reporter (Newsletter). The first edition of the Reporter was released during the winter of 1968. The Newsletter has been published each quarter since then.

The RCU Reporter, edited by Mr. Clarence A. Dittenhafer, Research Associate, is a vehicle to aid in transporting vocational education research and related literature to interested educators. It is also designed to bridge the "utilization gap" between researchers and practitioners. Before the publication of The Reporter, not one newsletter specifically served all vocational-technical educators in Pennsylvania. The Newsletter does not only disseminate pertinent information of RCU research and related activities, but it also covered information from the Bureau of Vocational, Technical and Continuing Education and other related agencies.

Two standard features appear in nearly every issue of the Reporter, namely, the State Director's Column and Clip and Save. The director's column is written by Dr. John W. Struck, State Director of Vocational Education. The Clip and Save feature has proven to be a most important factor in dissemination. It is a service that features annotated bibliographies of outstanding research projects and publications. Each issue of the newsletter includes short summaries of two research projects that have been abstracted by the RCU staff. The interested reader may then request a copy of the complete abstract from the RCU. If the abstract proves valuable to the reader, he may borrow the entire text of the abstracted study through the RCU. The interest in Clip and Save was evidenced by the following list of abstracted studies and the numbers of each disseminated:

CLIP AND SAVE ABSTRACTS

Investigator	Title of Study	Number of Copies Requested
Campbell, Robert E.	Vocational Guidance in Secondary Education	69
Dutt, Karl	The Implications of Vocational Development on High School Level Vocational-Technical Education	54
Ferencz, Dorothy	A Comparison of a Master Teacher and Instructional Assistants in Automated Shorthand and Typewriting Instruction	45
Garbin, A. P. and Others	Problems in the Transition from High School to Work as Perceived by Vocational Educators	67
Harris, JoAnn E.	Project CVIS (Computerized Vocational Information System	51
Hoover, N. K. and Stevens, G. Z.	Utilization of Occupational Information in Agriculture by Guidance Counselors and Teachers	46

Impelliteri, J. T.	The Development and Evaluation of a Pilot Computer Assisted Occupational Guidance Program	47
Kaufman, Jacob J., Schaefer, Carl J., and Others	The Role of the Secondary Schools in the Preparation of Youth for Employment	155
Malsbary, Dean R., and Others	A Study of Beginning Office Workers in Connecticut	66
Parker, J. K. and Brewin, C. E.	A Study of Post High School Education Needs in Bucks County	51
Recklitis, John M.	The Occupational Services Curriculum	51
	TOTAL	702

To Be Cited in Fall Issue - 1969

Carn, Luella L., and Morrow, Mary Elizabeth	Development and Evaluation of a Curriculum of Wage Earning Occupation
Coates, Margaret D.	An Eight-Week Experimental Project in Computer Programming to Determine the Feasibility of Purchasing Computer Time from a Local Business to Teach Such a Course

The list above does not include abstracts of these and other materials given to persons in the office or at various conferences and workshops. Many copies of complete texts have been borrowed from the RCU as a result of being featured in Clip and Save.

Pennsylvania Abstracts of Research and Related Materials (PARM)

Mr. John Landis, Research Intern, completed and disseminated approximately 5,000 copies of Pennsylvania Abstracts of Research and Related Materials (PARM). PARM is a document containing a review of all research projects that have been funded in Pennsylvania with State ancillary funds. The abstract form closely parallels a similar

document (Abstracts of Research Materials) produced by the ERIC Clearinghouse at The Ohio State University. This was done in order to facilitate easy submission of appropriate research abstracts to ERIC.

The RCU has cooperated with VT-ERIC in submitting research and related projects to be included in the system. Many documents were submitted to the center at Ohio State and the unit maintained constant communication with the personnel there.

Other dissemination efforts have included such activities as the RCU staff members replying to individual requests from vocational educators for information and making presentations to graduate-student seminars and other groups on the various activities of the RCU.

IV. SIGNIFICANT FINDINGS OR EVENTS

The significant findings and events of the RCU may be best reported in terms of the success of the unit during its three years of operation as a change agent in vocational education in the Commonwealth. The factors given below are evidences of this:

1. Vocational educators in the State are beginning to recognize the value of research in program decision making,

2. Many of the significant recommendations of the comprehensive study of vocational education are being implemented, i.e., follow-up study of high school students, supply-demand model of the labor force, and reorganization of the Bureau of Vocational, Technical and Continuing Education for efficiency and effectiveness,

3. A number of requests from vocational educators for assistance with potential and on-going research projects are being presented,

4. A number of special presentations,as related to research from State level, college and university, and local personnel are being requested, and

5. The quality of research activities being conducted in the State is improving.

V. OTHER ACTIVITIES

Graduate Follow-up System

The RCU developed a graduate follow-up system during 1968-69 fiscal year, based on a major recommendation of the Pennsylvania Vocational Education Study. The system, developed in cooperation with the Educational Systems Research Institute, will provide a computerized method to follow-up vocational education graduates and early leavers.

The primary objective is to provide useful data and information about the employment and further education of occupational education graduates and early leavers.

The data obtained through the follow-up system will provide the information necessary for preparing: (1) an annual program directory; (2) an annual descriptive report showing growth in curriculum offerings, enrollments and graduate outputs; (3) a summary of the postsecondary plans of occupational education graduates; (4) an annual assessment of the employability of graduates; and (5) an annual descriptive report of graduate behavior patterns twelve months after graduation.

There are three phases in the follow-up system. Phase I, initiated each fall, involves obtaining information from Pennsylvania school districts about occupational curriculum offerings. This information is used to compile the occupational education directory. The directory will aid state and district planning, guidance, evaluation and research.

Phase II of the system involves the completion of student information forms by all occupational education seniors except business education where a representative sample will be asked to respond. The information will provide student addresses for later follow-up activities and the data for a Pennsylvania occupational education growth report.

Phase III follows Phase II by a minimum of one year. The seniors identified in Phase II receive follow-up survey questionnaires one year after graduation. The completed questionnaires provide the information necessary for the occupational program graduate and early leaver survey reports. The follow-up system is designed to permit additional analyses at the fifth year or any other interval after graduation. Federal, state and local requirements will dictate the time interval between surveys.

State Plan for Vocational Education

The RCU staff devoted considerable energies to assisting in interpreting the Vocational Education Amendments of 1968 (P. L. 90-576) and developing the State Plan for Vocational Education in Pennsylvania.

Dr. Jay Smink was a member of a three man steering committee with responsibility for interpreting, disseminating and implementing the Act at the State level.

Dr. Ferman Moody was chairman of a committee to interpret and write the research implications of the Act at the State level. Miss Erma Keyes was chairman of a committee to interpret and write the vocational guidance aspects of the Act.

The work on the State Plan was done in cooperation with personnel from the Bureau of Vocational, Technical and Continuing Education and certain other vocational educators from across the state.

Selected Bibliography of Major Publications, Papers Presented and Consulting Services by RCU Staff Members

The RCU staff was encouraged and given the opportunity to publish materials, read papers and serve as consultants as a part of their service to vocational educators and professional development. The selected bibliography below is indicative of their activities.

Dittenhafer, Clarence A., Editor, RCU Reporter, 1967 - 1969.

Dittenhafer, Clarence A., "ERIC Systems and How to Use It", A Series of Projects to Vocational Educators and Community College Deans, 1967 - 1968.

Keyes, Erma D. and McNamara, James F., "A Guide for Converting Test Scores", The Clearinghouse, March, 1969.

Keyes, Erma D., Pennsylvania Personnel Guidance Association Annual Conference, Consultant, Hershey, Pennsylvania, April, 1968.

Keyes, Erma D., American Personnel and Guidance Association Annual Conference, Consultant, Las Vegas, Nevada, April, 1969.

Keyes, Erma D., The Need for Vocational Guidance in Schools, A Series of Lectures, 1968 - 1969

Landis, H. John, Editor, Pennsylvania Abstracts of Research and Related Materials (PARM), RCU Publication of Research Projects, 1969.

McNamara, James F., "A Guide for Converting Test Scores", The Clearinghouse, March, 1969.

McNamara, James F., "Using School Mathematic Personnel in Business Education", The Journal of Business Education (forthcoming).

McNamara, James F., "Turnabout! Students Speak to Teachers", Paper Presented to Annual Meeting of the American Statistical Association, New York City, August, 1969.

McNamara, James F., "Uses and Limitation of Statistical Analysis in Research", Paper Presented to Annual Meeting of the Pennsylvania Home Economic Coordinators, 1967.

McNamara, James F., Chairmanship, AASA Session on Vocational Education, Annual Meeting of the American Association of School Administrators, Atlantic City, New Jersey, 1968.

Moody, Ferman B., "Teacher Aide, Description and Analysis of a New Staff Position in Pennsylvania Public Schools", Pennsylvania School Journal, March, 1968.

Moody, Ferman B., "How to Pigeonhole Teacher Aides for Better Performance and Production", American School Board Journal, September, 1968.

Moody, Ferman B., "Educational Assistants", Chapter in Technicians in Public Service and Education, J. G. Ferguson Publishing Company, Fall, 1969.

Moody, Ferman B., Northeastern States Conference to Evaluate Title I Programs, Consultant, Buck Hill Falls, Pennsylvania.

Moody, Ferman B., "Systematic Approach to Vocational Research Program Planning", Paper Presented to National RCU Directors Conference, Salt Lake City, Utah, March, 1969.

Moody, Ferman B., "The Role of Vocational Education Research in Pennsylvania", Paper Presented to Annual Meeting of the Pennsylvania School Study Council, Pennsylvania State University, March, 1969.

Sites, Patricia T., "Move Vocational Education Ahead in Pennsylvania Through Research", Guidelines for Preparing a Proposal for Funding, Pennsylvania RCU Publication, 1969.

Sites, Patricia T., "Processing and Monitoring Research Projects", Pennsylvania RCU Publication, 1969.

Smink, Jay, "And a Few Program Ideas", The Journal of Industrial Arts Education, November, 1966.

Smink, Jay, "RCU for Vocational-Technical Education", Pennsylvania School Journal, October, 1967.

Smink, Jay, "Strategies and Procedures for a Continuous Evaluation Model of a State-wide Vocational Education System", National Conference on Evaluating Vocational and Technical Education Programs, W. E. Upjohn Institute for Employment Research, Atlantic City, New Jersey, 1968.

Smink, Jay, "Research Training Conference for School Counselors", Consultant, Altoona School District, June, 1968.

Smink, Jay, "Improving Vocational Education Evaluation", Consultant, Vocational Conference, University of Arkansas, August, 1969.

Smink, Jay, "A Systems Approach to Vocational Education Program Planning", Paper Presented to RCU Directors Conference, Salt Lake City, Utah, March, 1969.

Smink, Jay, "Career Exploration", Paper Presented to American Vocational Association Annual Conference, Dallas, Texas, December, 1968.

Snarponis, Joseph, "Differential Effects of Two Scoring Methods on AAT Test Performance Prediction and Validation of AAT Prediction of Female Academic Performance", Unpublished Masters Degree Thesis, Bucknell University, 1968.

VI. PROBLEMS

One of the major problems that has continually plagued the RCU was securing and maintaining professional staff members. The RCU was adequately staffed for only one quarter of its three years of operation. This problem caused all staff members to become competent in, and render services to, a broad range of activities in order to fulfill its objectives. During the conduct of the Comprehensive Study of Vocational Education the problem caused the RCU staff to work many hours overtime without fiscal remuneration.

The lack of Federal and State funds to adequately finance all needed research and related projects was another problem faced by the RCU. This was especially true during 1968 and 1969. This problem created a difficult position for the RCU. Although the staff was devoting considerable effort towards stimulating and encouraging vocational educators to conduct research, the funding of new proposals was virtually curtailed. This problem was especially handicapping to the overall effectiveness of project PROJECT. Hopefully, the appropriations under P. L. 90-576 will provide adequate funds to finance several high priority research activities.

Developing a system to effectively disseminate research findings and other materials to appropriate vocational educators was a cause of major concern, and created somewhat of a problem. The problem seemed to have stemmed from civil service regulations making it difficult to secure a professional staff member with competencies needed to develop and operate a dissemination system. Moreover, RCU staff members were so preoccupied with equally important tasks that sufficient time could not have been devoted to dissemination. (Preliminary plans are currently being made to develop a system to effectively disseminate pertinent vocational research and related literature to the right individual at the right time).

Another problem closely related to dissemination was the limited amount of needed equipment available to the RCU; i.e., photo copier, multilith and other smaller equipment. If this equipment had been more readily accessible to the RCU, staff members could have done a better job in the area of disseminating vocational information. Also, valuable time would have been saved in reviewing literature and performing clerical tasks.

Communications with personnel in the Bureau of Vocational, Technical and Continuing Education and other bureaus and agencies created a problem during the first 18 months of operations. As was stated earlier, the problem seemed to have stemmed from a lack of concern on the part of vocational educators for the value of research. However, the type of interaction and communication necessitated by the conduct of the comprehensive study of vocational education, and the persistence of the RCU in stimulating and encouraging the development of research, have virtually eliminated the problem.

VII. STAFF SUMMARY

DEPARTMENT OF EDUCATION

Dr. John W. Struck . . . . . State Director of Vocational Education

Dr. Robert B. Hayes . . . . . Director of Bureau of Research

RCU STAFF SUMMARY

Name	Title or Function	Period Employed	% of Time
	Professionals		
Dr. Jay Smink	Acting Director, RCU Assistant Director, RCU Director, RCU	8/66 - 12/66 12/66 - 7/67 7/67 - Present	100%
Dr. Thomas E. Long	Director	12/66 - 7/67	100%
Dr. Ferman B. Moody	Assistant Director	10/67 - Present	100%
Mr. James F. McNamara	Research Associate	9/66 - 10/68 10/68 - Leave 9/69 - Return	100%
Mr. Clarence A. Dittenhafer	Research Associate	1/67 - 9/69 9/69 - Leave	100%
Miss Erma D. Keyes	Research Associate	12/67 - 7/69	100%
Mrs. Patricia T. Sites	Research Associate	10/68 - Present	100%
Mrs. Ann Clausner	Research Assistant	10/67 - 6/68	100%
Mr. Joseph M. Snarponis	Research Intern Research Assistant	10/66 - 6/68 6/68 - 1/69	70% 100%
Mr. H. John Landis	Research Intern	10/68 - Present	66%
Mr. Robert Goldberg	Systems Analyst	11/68 - 1/69	40%

STAFF SUMMARY (CONT'D.)

Special Consultants

Dr. Walter M. Arnold	Director of Pennsylvania Vocational Education Study	8/67 - 8/69	100%
Mr. Robert T. Stoner	Consultant to State Study	4/68 - 180 days 7/68 - 180 days	100% 100%
Mr. William J. Hucksoll	Consultant to State Study	4/68 - 120 days 7/68 - 120 days	100% 100%
Mr. Robert Willard	Systems Analyst (General Electric)	4/68 - 120 days 7/68 - 120 days	100% 100%
Mr. Jack Ross	Systems Analyst (General Electric)	4/68 - 120 days 7/68 - 120 days	90%
Mr. Kenneth Pfeiffer	Consultant to State Study	4/68 - 4/69	90%
Mr. Robert F. Jacobsen	Consultant to State Study	10/67 - 1/68	100%

Clerical

Mrs. Jane L. Frazier	Stenographer	9/67 - Present	100%
Miss Joanne R. Kastelic	Stenographer	8/68 - Present	100%
Miss Janice Roberts	Stenographer	1/68 - 7/69	100%
Miss Nina Jarmolenko	Stenographer	9/68 - Present	100%
Miss Deborah L. Runkle	Stenographer	6/69 - Present	100%
Miss Sondra Lee Boyd	Stenographer	10/66 - 7/67	100%
Mrs. Carol A. Condran	Stenographer	10/66 - 8/68	100%
Mrs. JoAnne Orr	Clerk - Special Assistant for State Study	11/68 - 8/69	100%
Mrs. Frances Grosky	Stenographer - Special Assistant for State Study	11/68 - 8/69	100%

VIII. CAPITAL EQUIPMENT PURCHASE

The RCU purchased and placed in service a 3M Microfiche Reader-Printer. Microfiche cards, distributed by the ERIC Clearinghouse, and microfilm are visually displayed on a screen for immediate reading. The printer capability provides the researcher with enlarged hard copies of selected pages of filmed material. Ample quantities of desired information can be prepared for immediate use or for dissemination upon request. Time is saved in reviewing projects conducted across the nation and wasteful duplication of research efforts can be minimized. Limited possession of this machine by other educational agencies focuses attention on the research dissemination function of the RCU.

IX. FUTURE ACTIVITIES

Vocational Education Dissemination System

The RCU submitted a proposal to VT-ERIC and was selected as one of seven states to develop a pilot vocational education dissemination system. The system will be developed in cooperation with VT-ERIC, the library education staff at Millersville State College (MSC) and the professional staff at Research and Information Services for Education (RISE), a Title III project in the Commonwealth of Pennsylvania.

A planning grant will be made to Millersville State College to support a six to nine month planning phase for designing the dissemination system. The planning phase will be conducted primarily by the staff of MSC, RISE, RCU, and VT-ERIC, utilizing others when necessary.

The initial grant will also feature a pilot phase to test the basic system design. This phase, lasting from three to six months,will provide a basis for determining whether or not to complete the system. The proposed system will be operated primarily by the Department of Education (Research Coordinating Unit) with a close back-up data network housed at Millersville State College and/or other advantageous locations. Several back-up services such as special literature searchers provided by RISE will be part of the total program available to educators in the Commonwealth. User analysis studies and periodic evaluations will be conducted as the system develops.

Supply Demand Model

The Pennsylvania Research Coordinating Unit is currently making plans to develop a mathematical supply and demand model for the allocation of Federal resources to local schools for vocational-technical education

program planning. The development of the model is an outgrowth of a recommendation from the Pennsylvania Vocational Education Study. The proposed model, which uses the manpower demand approach for analyzing human resource development in schools will base funding on a set of perimeters derived from the supply-demand relationship that exist in a specific labor market area. While the model investigates the output of trained graduates by all educational agencies in the labor market area (e.g. community colleges, technical institutes and manpower programs), it will tend to maximize the output of public secondary schools, and consider the output of other educational institutions as a fixed flow. The current plan is to investigate the utility of a dynamic extension of a linear programming model which is widely used in developmental economics. This should allow the State Education Department to simulate the results of different funding patterns over three to five year periods.

Northeastern States Teacher Education Study

The Pennsylvania Research Coordinating Unit has cooperated and assisted in planning a study of the "Characteristics of Industrial Trade and Technical Teacher Preparation in Selected Northeastern States". The problem and objectives of the study are:

1. To identify the distinctive characteristics of the preparation and development of practicing industrial trade and technical teachers, in a number of states, so that each state may assess the educational and occupational preparation of its teachers in terms of its own goals and standards, as well as in relation to those of other states. Ultimately, and with the assistance of further research, a link should be established between the various elements of such teacher preparation and teaching effectiveness.

2. To evolve an appropriate instrument, methodology and procedures for identifying and measuring the various aspects of industrial trade and technical teacher preparation.

3. To provide each state with definitive information about the preparation characteristics of its industrial trade and technical teachers by which it can assess (a) relationships of teacher selection and preparation in terms of its own goals and (b) relationships of teacher selection and preparation with other states.

4. To develop categories of data which can be incorporated into further evaluative research areas such as (a) occupational experience as a factor in teacher effectiveness, (b) professional preparation as a factor in teacher effectiveness,

(c) relationships of specific content courses to teacher effectiveness, (d) relationships of teacher preparation to student success in school and (e) relationships of teacher preparation to student success in employment.

5. Development of consideration for a national system of collecting and maintaining data on teacher preparation programs and standards.

As soon as funding is approved by the U. S. Office of Education, the RCU in Pennsylvania will participate in conducting the research.

Other Future Activities

The RCU's future plans include the following activities in addition to those presented above:

1. Stimulate and encourage the development of occupational education research at all levels in the State;

2. Revise and perfect the monitoring system and procedures for conducting good quality research;

3. Cooperate and communicate with vocational educators and related agencies;

4. Develop and initiate a research grant program for innovative research and development projects for vocational teachers and personnel at the masters level in vocational-technical education in the Commonwealth;

5. Complete program planning budgeting system assignments as a part of the State governments efforts to implement the system;

6. Identify additional research resources including personnel, funds, institutions and agencies;

7. Continue to publish the RCU Reporter;

8. Assist the Bureau of Vocational, Technical and Continuing Education in implementing P. L. 90-576 and the recommendations of the Vocational Education Study;

9. Update PARM at the end of each fiscal year; and

10. Attend and participate in workshops, meetings and conferences which will enhance the competencies and working relationships of the RCU staff.

X. SUMMARY

The RCU for Vocational Education was established in the Pennsylvania Department of Education in August 1966. During the first three years of operations, in spite of certain problems, the unit has made substantial progress towards all of its objectives which were stated in the original proposal to the U. S. Office of Education. A large number of research strategies and methodologies have been included in the conduct of research and related projects. The comprehensive study of vocational education and the 116 research and related projects are producing several necessary changes in vocational education in the Commonwealth. As a result of cooperation, communication and services, the unit has received adequate amount of recognition throughout the State and nation. The RCU has established the necessary framework and plans to move into the challenges mandated by P. L. 90-576 with even greater contributions to an effective program of vocational education designed to meet the needs of all persons, of all ages, in the Commonwealth.

APPENDIX A

DESCRIPTION OF RESEARCH AND RELATED PROJECTS
1966 to 1967

PROJECT DIRECTOR ADDRESS	TITLE	AMOUNT	YEARS IN OPERATION
Wurster, Clyde H. and Christian, Willard A. Williamsport Area School Williamsport, Pa.	A Survey of Business Offices in Williamsport	$ 250.00	1
Beck, James F. Bucks County School Board Doylestown, Pa.	Observation of Business Applications by Secondary School Business Teachers in Selected Firms in Bucks County	650.00	1
Brandon, G. L. Department of Vocational Education University Park, Pa.	Overhead Projection Workshop	2,223.00	1
Steadman, Charles W. University of Pittsburgh Pittsburgh, Pa.	Revision of Bulletin #380, Department of Public Instruction	2,580.00	11/66 to 4/67
White, T. F. Burrell School District Lower Burrell, Pa.	Work-Study Supervisor	1,560.00	7/66 to 6/67
Kishkunas, Louis J. Pittsburgh School District Pittsburgh, Pa.	Developmental Proposal for Vocational Teacher and Counselor Re-orientation	87,868.00	7/66 to 6/67
Kishkunas, Louis J. Pittsburgh Board of Public Education Pittsburgh, Pa.	Pittsburgh Health	95,920.00	7/66 to 6/67

Stoudt, Henry J. Huntingdon Area School District Huntingdon, Pa.	Work-Study Supervision	2,995.00	7/66 to 6/67
Kowash, Robert J. Hemphill Area School District Greensburg, Pa.	Work-Study Program Supervisor	600.00	9/66 to 6/67
Heslep, Thomas R. Altoona Area School District Altoona, Pa.	Vocational Work-Study Program	8,460.00	10/66 to 6/67
Numan, Desmond J. Allentown City School District Allentown, Pa.	A Comparison of the Typing Competencies Developed by Teaching Beginning Typing, Using Electric Typewriters with the Competencies Developed on Manual Typewriters	14,580.00	9/66 to 6/67
Cambria County Board of School Directors Ebensburg, Pa.	Employing Guidance Counselors for County Operated Programs for Slow Learners	18,165.00	9/66 to 6/67
Coulson, M. Francis Adams County Schools Gettysburg, Pa.	County Operated Guidance Program for Slow Learners	19,000.00	7/66 to 6/67
Miller, Thomas E. Pittsburgh School District Pittsburgh, Pa.	Food Marketing Technology	18,681.50	7/66 to 6/67
Stooksburg, Katherine A. & Goldburg, Stella R. Pennsylvania State University University Park, Pa.	Workshop for Secondary Home Economics Teachers	4,610.00	7/66 to 6/67
Davis, Frank S. Bloomsburg State College Bloomsburg, Pa.	Automated Data Processing in the Public High Schools of Pennsylvania	460.00	10/66 to 6/67
Potter, William M. Wilkinsburg Borough School District Pittsburgh, Pa.	Work-Study	16,200.00	10/66 to 6/67

Kurtzman, David H. University of Pittsburgh Pittsburgh, Pa.	Business Education	25,148.25	9/66 to 6/67
Burkman, Oscar C. Juniata Valley School District Alexandria, Pa.	Work-Study Program	120.00	11/66 to 6/66
Miller, Norman Tyrone School District Tyrone, Pa.	Work-Study	72.00	11/66 to 6/67
Scott, C.P. University of Pittsburgh Pittsburgh, Pa.	Vocational Education	4,265.00	1/67 to 6/67
Heiges, Ralph E. Shippensburg College Shippensburg, Pa.	Laboratory Use of Electrical, Mechanical and Electronic Calculators in Offices	80,780.00	1/67 to 6/67
Heiges, Ralph E. Shippensburg College Shippensburg, Pa.	Clerical Practice Office Machine	1,350.00	10/66 to 6/67
Shields, Ferdinand K. Cambria County Schools Ebensburg, Pa.	Occupational Preparation	7,549.00	6/66 to 6/67
Schoonover, Kenneth Northern Tioga School District Westfield, Pa.	Work-Study Program	420.00	1/67 to 6/67
Hirshfeld, Marvin Closky, David Temple University Philadelphia, Pa.	Development of Handbook for the Teacher- Coordinators of Distributive Education	9,838.00	2/67 to 6/67
Smith, Clinton T. Susquehanna County Schools Montrose, Pa.	Employment Opportunity and Demand Survey	750.00	3/67 to 5/67
Ulrich, Foster G. Lebanon County School Lebanon, Pa.	Pilot Program in Vocational Education	8,140.00	7/66 to 6/67

DESCRIPTION OF RESEARCH AND RELATED PROJECTS
1965 to 1966

PROJECT DIRECTOR ADDRESS	TITLE	AMOUNT	YEARS IN OPERATION
Toole, James O. and Davenport, R. W. Carbon County Area Vocational-Technical School Jim Thorpe, Pa.	Guidance for a Comprehensive Program for the Area Vocational-Technical School	$ 15,370.00	7/66 to 6/66
Kishkunas, Louis J. Pittsburgh Board of Public Education Pittsburgh, Pa.	A Comprehensive Conception for Facilities for Vocational Education	49,341.41	6/65 to 6/66
Kishkunas, Louis J. Pittsburgh City School District Pittsburgh, Pa.	Preparation of New Vocational Education Curricula	125,663.00	7/65 to 6/66
Smith, David A. and Kishkunas, Louis J. Pittsburgh Board of Public Education Pittsburgh, Pa.	Vocational Teacher and Counselor Reorientation	49,408.00	6/65 to 6/66
Bucks County Public Schools Doylestown, Pa.	Area Vocational-Technical School Regional Seminar for Secondary School Counselors and Principals in Selected Counties of the University of Pennsylvania Industrial Coordination Area	19,625.00	7/65 to 6/66
Scott, C. P. University of Pittsburgh Pittsburgh, Pa.	Distributive Education Department	16,150.16	7/65 to 6/66
Biddle, Glanard L. Shippensburg Area Joint School System Shippensburg, Pa.	Pilot Program of Diversified Occupations	4,497.49	7/65 to 6/66

Rhodes, Opal T. Indiana University of Pennsylvania Indiana, Pa.	School Food Service Institute	3,820.00	7/65 to 9/65
Randolph, Katherine G. Indiana University of Pennsylvania Indiana, Pa.	Pre-Kindergarten Workshop	2,486.00	6/65 to 8/65
Funk, Walter and Buck, John N. Coatesville Area School District Coatesville, Pa.	Project 20 (Vocational Education for Under-Achievers)	7,177.00	8/65 to 6/66
Albright, Harold B. Montgomery County Area Vocational-Technical School Hatboro, Pa.	Preparation of Specifications for Equipment in Area Vocational-Technical Schools	6,279.49	6/65 to 6/66
Hertzfeld, Arthur School District of Philadelphia Philadelphia, Pa.	Conference on Vocational Education	4,900.00	2/66 to 2/66
Zeimes, Norbert J. Temple University Philadelphia, Pa.	Distributive Education	5,125.57	7/65 to 6/66
Singer, Hallick University of Pennsylvania Philadelphia, Pa.	Vocational Education Leadership Conference	9,354.50	5/66 to 6/66
Hysong, James L. Brookville Area School District Brookville, Pa.	General Business Education	3,477.00	7/65 to 6/66
Harman, Allen C. Montgomery County Area Vocational-Technical Schools Hatboro, Pa.	Data Processing Systems	31,581.00	7/65 to 6/66
Dunlap, C. William Pocono Mountain Joint School Swiftwater, Pa.	Follow-Up Study of Non-College and Non-Business Graduates of Pocono Mt. Junior-Senior High School for Years 1962, 1963, 1964, and 1965	126.00	3/66 to 6/66

Chuse, Emanuel School District of Philadelphia Philadelphia, Pa.	Administration for Work-Study Project	40,526.00	11/65 to 6/66
Miller, Frederick H. Public Service Institute Harrisburg, Pa.	Public Service Institute In-service Training, Occupational Education	20,450.00	5/66 to 6/66
Blaney, Fred and Smith, Paul R. Armstrong County School Board Kittanning, Pa.	Research and Experimental Program in Distributive Education	3,505.00	7/65 to 6/66
Kurtz, Ray A. Blue Mountain School District Cressona, Pa.	Adult Education - Pilot Project	831.93	4/66 to 5/66
Ferencz, Dorothy Harrisburg Area Community College Harrisburg, Pa.	Study to Determine Feasibility of Using Master Teachers and Technicians in the Teaching of Shorthand and Typewriting	14,972.00	7/65 to 6/66
Brandon, George Pennsylvania State University University Park, Pa.	Trade and Industrial Education-Teacher Education	5,512.00	7/65 to 6/66
Wisor, Robert Centre County School Board Bellefonte, Pa.	Pilot Workshop in Vocational Guidance for Guidance Directors and Counselors	300.00	4/66 to 5/66
Irumbeller, A. E. Indiana University of Pennsylvania Indiana, Pa.	Teacher Education	7,097.50	5/66 to 6/66
Fischer, Floyd B. Pennsylvania State University University Park, Pa.	Workshop for Secondary Home Economics Teachers	1,969.00	5/66 to 6/66
Brandon, George Pennsylvania State University University Park, Pa.	Business and Office Occupations - Teacher Education	14,424.00	7/65 to 6/66

Henson, O. M. Temple University Philadelphia, Pa.	Business Education-Research Experimental and Developmental	12,483.10	7/65 to 6/66
Folk, Elliot State Public School Building Authority Harrisburg, Pa.	Data Processing and Vocational-Technical High Schools in Pennsylvania	3,000.00	7/65 to 6/66
Rison, Joseph J. Bethlehem Area Vocational-Technical School Bethlehem, Pa.	Area Study for Vocational Need	2,250.00	7/65 to 6/66

DESCRIPTION OF RESEARCH AND RELATED PROJECTS
1965 to 1967

PROJECT DIRECTOR ADDRESS	TITLE	AMOUNT	YEARS IN OPERATION
Mitchell, Jeanette Pleasant Valley School District Brodheadsville, Pa.	Supervised Food Service Worker	$ 12,299.79	5/65 to 6/67
Dunlap, R. L. Lancaster County Schools Lancaster, Pa.	Pilot Program in Vocational Education	22,600.00	7/65 to 6/67
Fischer, Floyd B. Pennsylvania State University University Park, Pa.	Program to Develop Teachers of Steward Training	41,713.00	9/65 to 6/67
Cross, Donald S. State College Area Schools State College, Pa.	Cooperative Work-Experience Program	26,948.68	7/65 to 6/67
Woods, Walter C. Wilkes-Barre City School District Wilkes-Barre, Pa.	Business Data Processing	976.50	7/65 to 6/67

DESCRIPTION OF RESEARCH AND RELATED PROJECTS
1967 to 1968

PROJECT DIRECTOR ADDRESS	TITLE	AMOUNT	YEARS IN OPERATION
Lathrop, Robert Pennsylvania State University University Park, Pa.	Workshop for Vocational Graphic Arts Teachers	$ 12,299.79	5/65 to 6/67

DESCRIPTION OF RESEARCH AND RELATED PROJECTS
1966 to 1968

PROJECT DIRECTOR ADDRESS	TITLE	AMOUNT	YEARS IN OPERATION
Bair, Charles A. Allegheny County School Board Pittsburgh, Pa.	Education for Work in Changing Times	$ 97,030.00	7/66 to 6/68
Wellington, A. M. Pennsylvania State University University Park, Pa.	Further Education for Vocational Guidance Counselors	164,044.00	7/66 to 6/68
Birth, Catherine W. and Ayre, James T. Wyoming Area School District West Pittston, Pa.	Pre-Entry Orientation for Cosmetology	14,030.75	7/66 to 6/68
Bartholomew, Ralph, Chattin, Donald J., and Rudder, Wilber, T.H. School District of Philadelphia Philadelphia, Pa.	Vocational Agriculture	157,003.72	7/66 to 6/68
Dutt, Karl Eastern Northampton County Easton, Pa.	Non-Graded Vocational-Technical School	35,300.00	7/66 to 6/68

Kishkunas, Louis J. Pittsburgh School District Pittsburgh, Pa.	Distributive Education Pilot Program	106,623.00	7/66 to 6/68
Kishkunas, Louis J. Pittsburgh Board of Education Pittsburgh, Pa.	Design and Test of a Model Work-Experience Program in a Great City Setting	181,638.00	7/66 to 6/68
Ferencz, Dorothy Harrisburg Area Community College Harrisburg, Pa.	Study to Determine Feasibility of Using Master Teacher Technicians in the Teaching of Shorthand and Typewriting	19,216.20	7/66 to 6/68
Rhodes, Kenneth B. Montgomery County Schools Norristown, Pa.	Turfgrass Management	62,550.03	7/66 to 6/67
Parker, John K. and Brewin, Charles E. Bucks County Public Schools Doylestown, Pa.	Proposal for the Study of Post High School Education Needs in Bucks County	59,000.00	7/66 to 6/68
McCoy, John E. Ligonier Valley School District Ligonier, Pa.	Occupational Orientation	22,515.70	7/66 to 6/68
Schrag, Adele F. Temple University Philadelphia, Pa.	1967 Data Processing Workshop	4,507.00	11/66 to 1/66
Horn, Robert S. Harrisburg Area Community College Harrisburg, Pa.	Job Training and Safety Program for the Rural Electric Association of Pennsylvania	21,903.31	7/66 to 6/68
Bair, Charles A. Allegheny County School Board Pittsburgh, Pa.	Developmental Proposal for Staff Development	117,545.00	7/66 to 6/68

DESCRIPTION OF RESEARCH AND RELATED PROJECTS
1965 to 1968

PROJECT DIRECTOR ADDRESS	TITLE	AMOUNT	YEARS IN OPERATION
Recklitis, John M. Penn Hills School District Pittsburgh, Pa.	Developing a Total Curriculum for Teaching the Service Occupations in the Proposed Penn Hills Vocational Department	$210,900.00	7/65 to 6/68
Kishkunas, Louis J. Pittsburgh Board of Public Education Pittsburgh, Pa.	Pittsburgh Health Training Center	225,800.00	7/65 to 6/68
Spoerllin, Harley Northern York County School District Dillsburg, Pa.	Diversified Occupations	32,094.00	7/65 to 6/68
Payntes, W. Robert Baldwin-Whitehall School District Pittsburgh, Pa.	Salable Skills in Home Economics in the Comprehensive High School	76,423.90	7/65 to 6/69
Kaufman, Jacob and Lewis, Morgan Pennsylvania State University University Park, Pa.	An Evaluation of Vocational Education in Pennsylvania	76,921.00	7/65 to 6/68
Dutrou, Donald R. and Williams, William Mifflinburg School Board Mifflinburg, Pa.	The Development, Implementation, and Evaluation of a Pilot Program in Agriculture, Machinery, Salesmanship, Partsman, and Gasoline Tractor	33,382.39	7/65 to 6/68
Pilker, Henry York County Schools York, Pa.	Curriculum Development for a Correlated Academic Program	29,178.25	7/65 to 6/68
Pitt, Donald West Chester Joint School System West Chester, Pa.	Project Triangle: A Home-Study-Community Program for School and Vocational Success	87.806.00	7/65 to 6/68

Dean, William H. Harrisburg Area Community College Harrisburg, Pa.	Hospitality - Food Service Management	34,470.00	7/65 to 6/68
Impellitteri, Joseph T. Pennsylvania State University University Park, Pa.	The Development and Evaluation of a Pilot Computer Assisted Occupation Guidance Program	194,530.00	7/65 to 6/68
Cherry, Kenneth L., and Walker, Robert W. Hollidaysburg Area Schools Hollidaysburg, Pa.	Grounds and Buildings	32,750.00	7/65 to 6/68
Olinsky, Marvin Upper Bucks County Technical School Perkasie, Pa.	Pilot Program in Horticulture	53,719.00	7/65 to 6/68
Hughes, Merrill J. Delaware County Area Vocational - Technical Schools Media, Pa.	Curriculum Development Program	52,890.00	7/65 to 6/68
Gravatt, Arthur E. Pennsylvania State University University Park, Pa.	Development and Evaluation of a Curriculum for the Handicapped to Improve Their Social and Community Skills Related to Wage Earning	44,718.00	7/65 to 6/68

DESCRIPTION OF RESEARCH AND RELATED PROJECTS
1968 to 1969

PROJECT DIRECTOR ADDRESS	TITLE	AMOUNT	YEARS IN OPERATION
Schaffer, George M. Bucks County Technical Schools Fairless Hills, Pa.	Electro-Mechnical Technology	$ 50,000.00	7/68 to 6/69

Kishkunas, Louis J. Pittsburgh Board of Public Education Pittsburgh, Pa.	A Coupled Educational and Work-Experience Summer Program for Disadvantaged Vocational Students	123,388.00	7/68 to 6/69
Lathrop, Robert Pennsylvania State University University Park, Pa.	Workshop for Vocational Teachers (Instructional Media)	2,739.00	1
Lathrop, Robert Pennsylvania State University University Park, Pa.	Workshop for New Vocational Teachers	400.00	1
Beck, James F. New Hope-Soleburg School District New Hope, Pa.	An Evaluation and Comparison of the Effectiveness of Various Types of Office Work-Experience Programs and Stimulated Office Experience as Conducted by Selected Second Class Secondary School Business Education Departments in Southeastern Pennsylvania as Determined in Larger Offices	5,025.00	7/68 to 6/69
Coates, Margaret D. Pocono Mountain School District Swiftwater, Pa.	Computer Programming (Acquaintanceship Only)	1,119.00	7/68 to 6/69
Newman, Carl A. North Allegheny School District Pittsburgh, Pa.	Occupational Skills	3,950.00	7/68 to 6/69
Pebley, Wilson A. Fulton County School Board McConnellsburg, Pa.	Survey Needs and Develop a Plan for a Program in Vocational-Technical Education	14,650.00	7/68 to 6/69
Zinn, Charles F. School District of the City of Chester Chester, Pa.	A New Approach to Meet Educational and Occupational Needs of Youth Who Are Possible Dropouts	28,247.40	7/68 to 6/69

DESCRIPTION OF RESEARCH AND RELATED PROJECTS
1967 to 1969

PROJECT DIRECTOR ADDRESS	TITLE	AMOUNT	YEARS IN OPERATION
Schrock, W. W. and Kissinger, W. E. Indiana County School Board Indiana, Pa.	Pilot Program in Vocational Horticulture	$ 21,616.00	7/67 to 6/69
Jones, Fred Pennsylvania State University University Park, Pa.	Workshop for Vocational Drafting Teachers	2,875.00	7/67 to 6/69

DESCRIPTION OF RESEARCH AND RELATED PROJECTS
1966 to 1969

PROJECT DIRECTOR ADDRESS	TITLE	AMOUNT	YEARS IN OPERATION
Osborn, E. F. Pennsylvania State University University Park, Pa.	Development and Evalution of Occupational Information in Agriculture	$ 27,800.00	7/66 to 6/69
Drazenovich, Dorothy and Newaron, C. A. North Allegheny School District Pittsburgh, Pa.	Textile Arts	21,104.12	7/66 to 6/69
Wensko, Paul Pennsylvania State University University Park, Pa.	Workshop for Vocational Electronics Teachers	6,050.00	7/66 to 6/69

Lathrop, Robert Pennsylvania State University University Park, Pa.	Workshop for Vocational-Practical Nurse Teachers	5,450.00	7/66 to 6/69
Kenamond, Sarah and Bubel, Nancy Lewisburg Area School District Lewisburg, Pa.	Home and Institutional Health Aide	3,988.21	7/66 to 6/69
Kishkunas, Louis J. Pittsburgh School District Pittsburgh, Pa.	Demonstration Project - Systematic Approach to Curriculum Development and Implementation in Vocational Education	378,177.00	7/66 to 6/69
Lord Carleton R. and Webb, George Pocono Mountain School District Swiftwater, Pa.	Agricultural Resources	43,214.09	7/66 to 6/69
Winger, H. Dale Pottstown School District Pottstown, Pa.	Institutional Food Service	27,327.00	7/66 to 6/69
Carn, Luella and Crist, Hazel Altoona Area School District Altoona, Pa.	Home Economics Wage-Earning Program	15,182.93	7/66 to 6/69
Schaffer, George M. and Horowitz, Benjamin Bucks County Area Vocational School Fairless Hills, Pa.	Adult Horticulture Pilot Program	29,920.65	7/66 to 6/69
Stevens, Glenn Z. Pennsylvania State University University Park, Pa.	Vocational-Technical Education in Agricultural Resources	24,516.00	7/66 to 6/69
Stevens, Stratton B. West Chester Area School District West Chester, Pa.	A Three-Year Program of Distributive Education in a Comprehensive Senior High School	33,454.96	7/66 to 6/69
Scanlon, Dorothy and Schocosky, Constance West Mifflin Area School District West Mifflin, Pa.	Home Economics Occupational Program	18,811.40	7/66 to 6/69